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03-07-01
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    4 <110> APPLICANT: Edwin L. Madison
    5           Edgar O. Ong
    6           Jiunn-Chern Yeh
    7           Corvas International, Inc.
    9 <120> TITLE OF INVENTION: NUCLEIC ACID MOLECULES ENCODING
   10           TRANSMEMBRANE SERINE PROTEASES, THE ENCODED PROTEINS AND
   11           METHODS BASED THEREON
   13 <130> FILE REFERENCE: 24745-1607
C--> 15 <140> CURRENT APPLICATION NUMBER: US/09/776,191
C--> 16 <141> CURRENT FILING DATE: 2001-02-02
   18 <150> PRIOR APPLICATION NUMBER: 60/213,124
   19 <151> PRIOR FILING DATE: 2000-06-22
   21 <150> PRIOR APPLICATION NUMBER: 60/234,840
   22 <151> PRIOR FILING DATE: 2000-06-22
   24 <150> PRIOR APPLICATION NUMBER: 60/179,982
   25 <151> PRIOR FILING DATE: 2000-02-03
   27 <150> PRIOR APPLICATION NUMBER: 60/183,542
   28 <151> PRIOR FILING DATE: 2000-02-18
   30 <150> PRIOR APPLICATION NUMBER: 09/657,968
   31 <151> PRIOR FILING DATE: 2000-02-08
   33 <160> NUMBER OF SEQ ID NOS: 72
   35 <170> SOFTWARE: FastSEQ for Windows Version 4.0
   37 <210> SEQ ID NO: 1
   38 <211> LENGTH: 3147
   39 <212> TYPE: DNA
   40 <213> ORGANISM: Homo Sapien
   42 <220> FEATURE:
   43 <223> OTHER INFORMATION: Nucleotide encoding MTSP1
   45 <221> NAME/KEY: CDS
   46 <222> LOCATION: (23)...(2589)
   48 <300> PUBLICATION INFORMATION:
   49 <301> AUTHORs: O'Brien, T.J. and Tanimoto, H.
   50 <308> DATABASE ACCESSION NO: GenBank AR081724
W--> 51 <310> PATENT DOCUMENT NUMBER: US Pat 5972616
   52 <311> PATENT FILING DATE: 1998-02-20
   53 <312> PUBLICATION DATE: 1999-10-26
   55 <400> SEQUENCE: 1
   56 tcaagagcgg cctcggggta cc atg ggg agc gat cgg gcc cgc aag ggc gga      52
   57                        Met Gly Ser Asp Arg Ala Arg Lys Gly Gly
   58                          1               5                  10
   60 ggg ggc ccg aag gac ttc ggc gcg gga ctc aag tac aac tcc cgg cac     100
   61 Gly Gly Pro Lys Asp Phe Gly Ala Gly Leu Lys Tyr Asn Ser Arg His
   62              15                  20                  25
   64 gag aaa gtg aat ggc ttg gag gaa ggc gtg gag ttc ctg cca gtc aac     148
   65 Glu Lys Val Asn Gly Leu Glu Glu Gly Val Glu Phe Leu Pro Val Asn
   66              30                  35                  40
   68 aac gtc aag aag gtg gaa aag cat ggc ccg ggg cgc tgg gtg gtg ctg     196
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see page 5

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69 Asn Val Lys Lys Val Glu Lys His Gly Pro Gly Arg Trp Val Val Leu
70            45                  50                  55
72 gca gcc gtg ctg atc ggc ctc ctc ttg gtc ttg ctg ggg atc ggc ttc    244
73 Ala Ala Val Leu Ile Gly Leu Leu Leu Val Leu Leu Gly Ile Gly Phe
74        60                  65                  70
76 ctg gtg tgg cat ttg cag tac cgg gac gtg cgt gtc cag aag gtc ttc    292
77 Leu Val Trp His Leu Gln Tyr Arg Asp Val Arg Val Gln Lys Val Phe
78 75                  80                  85                  90
80 aat ggc tac atg agg atc aca aat gag aat ttt gtg gat gcc tac gag    340
81 Asn Gly Tyr Met Arg Ile Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu
82            95                 100                 105
84 aac tcc aac tcc act gag ttt gta agc ctg gcc agc aag gtg aag gac    388
85 Asn Ser Asn Ser Thr Glu Phe Val Ser Leu Ala Ser Lys Val Lys Asp
86           110                 115                 120
88 gcg ctg aag ctg ctg tac agc gga gtc cca ttc ctg ggc ccc tac cac    436
89 Ala Leu Lys Leu Leu Tyr Ser Gly Val Pro Phe Leu Gly Pro Tyr His
90           125                 130                 135
92 aag gag tcg gct gtg acg gcc ttc agc gag ggc agc gtc atc gcc tac    484
93 Lys Glu Ser Ala Val Thr Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr
94        140                 145                 150
96 tac tgg tct gag ttc agc atc ccg cag cac ctg gtg gag gag gcc gag    532
97 Tyr Trp Ser Glu Phe Ser Ile Pro Gln His Leu Val Glu Glu Ala Glu
98 155                 160                 165                 170
100 cgc gtc atg gcc gag gag cgc gta gtc atg ctg ccc ccg cgg gcg cgc   580
101 Arg Val Met Ala Glu Glu Arg Val Val Met Leu Pro Pro Arg Ala Arg
102            175                 180                 185
104 tcc ctg aag tcc ttt gtg gtc acc tca gtg gtg gct ttc ccc acg gac   628
105 Ser Leu Lys Ser Phe Val Val Thr Ser Val Val Ala Phe Pro Thr Asp
106           190                 195                 200
108 tcc aaa aca gta cag agg acc cag gac aac agc tgc agc ttt ggc ctg   676
109 Ser Lys Thr Val Gln Arg Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu
110           205                 210                 215
112 cac gcc cgc ggt gtg gag ctg atg cgc ttc acc acg ccc ggc ttc cct   724
113 His Ala Arg Gly Val Glu Leu Met Arg Phe Thr Thr Pro Gly Phe Pro
114        220                 225                 230
116 gac agc ccc tac ccc gct cat gcc cgc tgc cag tgg gcc ctg cgg ggg   772
117 Asp Ser Pro Tyr Pro Ala His Ala Arg Cys Gln Trp Ala Leu Arg Gly
118 235                 240                 245                 250
120 gac gcc gac tca gtg ctg agc ctc acc ttc cgc agc ttt gac ctt gcg   820
121 Asp Ala Asp Ser Val Leu Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala
122            255                 260                 265
124 tcc tgc gac gag cgc ggc agc gac ctg gtg acg gtg tac aac acc ctg   868
125 Ser Cys Asp Glu Arg Gly Ser Asp Leu Val Thr Val Tyr Asn Thr Leu
126            270                 275                 280
128 agc ccc atg gag ccc cac gcc ctg gtg cag ttg tgt ggc acc tac cct   916
129 Ser Pro Met Glu Pro His Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro
130            285                 290                 295
132 ccc tcc tac aac ctg acc ttc cac tcc tcc cag aac gtc ctg ctc atc   964
133 Pro Ser Tyr Asn Leu Thr Phe His Ser Ser Gln Asn Val Leu Leu Ile
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RAW SEQUENCE LISTING   DATE: 02/28/2001
PATENT APPLICATION: US/09/776,191   TIME: 15:35:56

Input Set : A:\l607seq.001
Output Set: N:\CRF3\02282001\I776191.raw

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134     300                 305                 310
136 aca ctg ata acc aac act gag cgg cgg cat ccc ggc ttt gag gcc acc     1012
137 Thr Leu Ile Thr Asn Thr Glu Arg Arg His Pro Gly Phe Glu Ala Thr
138 315                 320                 325                 330
140 ttc ttc cag ctg cct agg atg agc agc tgt gga ggc cgc tta cgt aaa     1060
141 Phe Phe Gln Leu Pro Arg Met Ser Ser Cys Gly Gly Arg Leu Arg Lys
142             335                 340                 345
144 gcc cag ggg aca ttc aac agc ccc tac tac cca ggc cac tac cca ccc     1108
145 Ala Gln Gly Thr Phe Asn Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro
146             350                 355                 360
148 aac att gac tgc aca tgg aac att gag gtg ccc aac aac cag cat gtg     1156
149 Asn Ile Asp Cys Thr Trp Asn Ile Glu Val Pro Asn Asn Gln His Val
150             365                 370                 375
152 aag gtg agc ttc aaa ttc ttc tac ctg ctg gag ccc ggc gtg cct gcg     1204
153 Lys Val Ser Phe Lys Phe Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala
154     380                 385                 390
156 ggc acc tgc ccc aag gac tac gtg gag atc aat ggg gag aaa tac tgc     1252
157 Gly Thr Cys Pro Lys Asp Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys
158 395             .400        ·.          405                 410
160 gga gag agg tcc cag ttc gtc gtc acc agc aac agc aac aag atc aca     1300
161 Gly Glu Arg Ser Gln Phe Val Val Thr Ser Asn Ser Asn Lys Ile Thr
162             415                 420                 425
164 gtt cgc ttc cac tca gat cag tcc tac acc gac acc ggc ttc tta gct     1348
165 Val Arg Phe His Ser Asp Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala
166             430                 435                 440
168 gaa tac ctc tcc tac gac tcc agt gac cca tgc ccg ggg cag ttc acg     1396
169 Glu Tyr Leu Ser Tyr Asp Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr
170         445                 450                 455
172 tgc cgc acg ggg cgg tgt atc cgg aag gag ctg cgc tgt gat ggc tgg     1444
173 Cys Arg Thr Gly Arg Cys Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp
174     460                 465                 470
176 gcc gac tgc acc gac cac agc gat gag ctc aac tgc agt tgc gac gcc     1492
177 Ala Asp Cys Thr Asp His Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala
178 475                 480                 485                 490
180 ggc cac cag ttc acg tgc aag aac aag ttc tgc aag ccc ctc ttc tgg     1540
181 Gly His Gln Phe Thr Cys Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp
182             495                 500                 505
184 gtc tgc gac agt gtg aac gac tgc gga gac aac agc gac gag cag ggg     1588
185 Val Cys Asp Ser Val Asn Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly
186             510                 515                 520
188 tgc agt tgt ccg gcc cag acc ttc agg tgt tcc aat ggg aag tgc ctc     1636
189 Cys Ser Cys Pro Ala Gln Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu
190         525                 530                 535
192 tcg aaa agc cag cag tgc aat ggg aag gac gac tgt ggg gac ggg tcc     1684
193 Ser Lys Ser Gln Gln Cys Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser
194     540                 545                 550
196 gac gag gcc tcc tgc ccc aag gtg aac gtc gtc act tgt acc aaa cac     1732
197 Asp Glu Ala Ser Cys Pro Lys Val Asn Val Val Thr Cys Thr Lys His
198 555                 560                 565                 570
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RAW SEQUENCE LISTING   DATE: 02/28/2001
PATENT APPLICATION: US/09/776,191   TIME: 15:35:57

Input Set : A:\1607seq.001
Output Set: N:\CRF3\02282001\I776191.raw

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200 acc tac cgc tgc ctc aat ggg ctc tgc ttg agc aag ggc aac cct gag     1780
201 Thr Tyr Arg Cys Leu Asn Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu
202             575             580             585
204 tgt gac ggg aag gag gac tgt agc gac ggc tca gat gag aag gac tgc     1828
205 Cys Asp Gly Lys Glu Asp Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys
206             590             595             600
208 gac tgt ggg ctg cgg tca ttc acg aga cag gct cgt gtt gtt ggg ggc     1876
209 Asp Cys Gly Leu Arg Ser Phe Thr Arg Gln Ala Arg Val Val Gly Gly
210             605             610             615
212 acg gat gcg gat gag ggc gag tgg ccc tgg cag gta agc ctg cat gct     1924
213 Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val Ser Leu His Ala
214             620             625             630
216 ctg ggc cag ggc cac atc tgc ggt gct tcc ctc atc tct ccc aac tgg     1972
217 Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp
218 635             640             645             650
220 ctg gtc tct gcc gca cac tgc tac atc gat gac aga gga ttc agg tac     2020
221 Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr
222             655             660             665
224 tca gac ccc acg cag tgg acg gcc ttc ctg ggc ttg cac gac cag agc     2068
225 Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu His Asp Gln Ser
226             670             675             680
228 cag cgc agc gcc cct ggg gtg cag gag cgc agg ctc aag cgc atc atc     2116
229 Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu Lys Arg Ile Ile
230             685             690             695
232 tcc cac ccc ttc ttc aat gac ttc acc ttc gac tat gac atc gcg ctg     2164
233 Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu
234             700             705             710
236 ctg gag ctg gag aaa ccg gca gag tac agc tcc atg gtg cgg ccc atc     2212
237 Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met Val Arg Pro Ile
238 715             720             725             730
240 tgc ctg ccg gac gcc tcc cat gtc ttc cct gcc ggc aag gcc atc tgg     2260
241 Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly Lys Ala Ile Trp
242             735             740             745
244 gtc acg ggc tgg gga cac acc cag tat gga ggc act ggc gcg ctg atc     2308
245 Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile
246             750             755             760
248 ctg caa aag ggt gag atc cgc gtc atc aac cag acc acc tgc gag aac     2356
249 Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr Thr Cys Glu Asn
250             765             770             775
252 ctc ctg ccg cag cag atc acg ccg cgc atg atg tgc gtg ggc ttc ctc     2404
253 Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys Val Gly Phe Leu
254             780             785             790
256 agc ggc ggc gtg gac tcc tgc cag ggt gat tcc ggg gga ccc ctg tcc     2452
257 Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser
258 795             800             805             810
260 agc gtg gag gcg gat ggg cgg atc ttc cag gcc ggt gtg gtg agc tgg     2500
261 Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly Val Val Ser Trp
262             815             820             825
264 gga gac ggc tgc gct cag agg aac aag cca ggc gtg tac aca agg ctc     2548
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RAW SEQUENCE LISTING   DATE: 02/28/2001
PATENT APPLICATION: US/09/776,191   TIME: 15:35:57

Input Set : A:\1607seq.001
Output Set: N:\CRF3\02282001\I776191.raw

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265 Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu
266             830             835                 840
268 cct ctg ttt cgg gac tgg atc aaa gag aac act ggg gta ta ggggccgggg      2599
269 Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn.Thr Gly Val
270             845                 850                 855
272 ccacccaaat gtgtacacct gcggggccac ccatcgtcca ccccagtgtg cacgcctgca      2659
273 ggctggagac tggaccgctg actgcaccag cgcccccaga acatacactg tgaactcaat      2719
274 ctccagggct ccaaatctgc ctagaaaacc tctcgcttcc tcagcctcca aagtggagct      2779
275 gggaggtaga aggggaggac actggtggtt ctactgaccc aactgggggc aaaggtttga      2839
276 agacacagcc tcccccgcca gccccaagct gggccgaggc gcgtttgtgt atatctgcct      2899
277 cccctgtctg taaggagcag cgggaacgga gcttcggagc ctcctcagtg aaggtggtgg      2959
278 ggctgccgga tctgggctgt ggggcccttg ggccacgctc ttgaggaagc ccaggctcgg      3019
279 aggaccctgg aaaacagacg ggtctgagac tgaaattgtt ttaccagctc ccagggtgga      3079
280 cttcagtgtg tgtatttgtg taaatgggta aaacaattta tttctttta aaaaaaaaaa        3139
281 aaaaaaaa                                                               3147
283 <210> SEQ ID NO: 2
284 <211> LENGTH: 855
285 <212> TYPE: PRT
286 <213> ORGANISM: Homo Sapien
288 <400> SEQUENCE: 2
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291 Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
292             20                  25                  30
293 Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
294             35                  40                  45
295 Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
296     50                  55                  60
297 Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
298 65                  70                  75                  80
299 Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
300             85                  90                  95
301 Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
302             100                 105                 110
303 Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
304             115                 120                 125
305 Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
306     130                 135                 140
307 Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
308 145                 150                 155                 160
309 Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
310             165                 170                 175
311 Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
312             180                 185                 190
313 Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
314             195                 200                 205
315 Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
316     210                 215                 220
317 Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
```

FYI.

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least ne n or Xaa.

VERIFICATION SUMMARY   DATE: 02/28/2001
PATENT APPLICATION: US/09/776,191   TIME: 15:35:58

Input Set : A:\1607seq.001   2/28/01
Output Set: N:\CRF3\02282001\I776191.raw

L:15 M:270 C: Current Application Number differs, Replaced Current Application Number
L:16 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:51 M:256 W: Invalid Numeric Header Field, Wrong PATENT DOCUMENT NUMBER:US NN/NNN,NNN
L:1539 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:1554 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14